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EXAMINER
LEUBECKER, J

ART UNIT	PAPER NUMBER
3302	19

F3M1/0705

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DATE MAILED: 07/05/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 4/10/95 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ~~____ days~~ from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☒ Claims 50-77 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims 50-77 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☒ disapproved by the examiner (see explanation).

11. ☒ The proposed drawing correction, filed 4/10/95, has been ☒ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

1. Claims 62, 65 and 76 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim **62** is indefinite because the light source is recited in addition to a means for injecting light, implying that two means for injecting light exist. The examiner suggests that "further including" in this claim be changed to --wherein the means for injecting light further includes--.

As to claim **65**, "said second lens" lacks antecedence.

As to claim **76**, "last-mentioned means" is improper. This should be changed to --means for injecting light--.

Dependent claims where present inherit those defects.

2. Claims 50 and 51 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nakajima et al. (U.S. Pat. 4,777,524).

Note Figure 1 which shows a first lens (22), a second bi-directionally movable lens (26), a photodetector (42), a control rod (64), and manually actuated drive means (54).

3. Claims 63 and 64 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sato et al. (U.S. Pat. 4,488,039).

Sato discloses a tube and handle (not shown but inherent structure for an endoscope), a first lens (L1), a photodetector

(C1), a control rod (moving coil 104), and first drive means (106). As broadly as claimed, the drive means is "carried by the handle".

4. Claim 52 is rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima et al. in view of Sato et al.

Although Nakajima only discloses manually actuated drive means, Sato teaches the use of motorized systems (col.2, lines 53-63). The replacement of a manual operation with an automatic operation is a design consideration within the skill of the art. In re Venner, 262 F.2d 91, 120 USPQ 192 (CCPA 1955).

5. Claims 58-62 are rejected under 35 U.S.C. § 103 as being unpatentable over Nakajima et al. in view of Richards (U.S. Pat. 3,091,235).

Nakajima et al. discloses an illumination bundle (16) extending along side the optical system and thus fails to show a concentric arrangement. Nakajima et al. also shows a connector (Fig.1) for attaching a fiber cable from a remote light source but fails to show a light source disposed in the handle. However, Richards teaches a concentric arrangement of illumination fibers between two tubes (Fig.7) and a light source in the handle (Fig.3). Although concentric illumination fibers is conventional and well known in this art, the skilled artisan

would find desirability in such a space efficient arrangement. The use of a light source in the handle would eliminate awkwardness in movement due to the attachment of a remote light source cable. Therefore, these features would be obvious to the skilled artisan to include on an endoscope.

6. Claims 50-55, 57 and 65 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Sato in view of Kawahara (U.S. Pat. 3,819,267).

As to claims 50, 53 and 65, Sato discloses the device as described above in section 3. Sato additionally discloses a zoom lens (L2) and electric rotary motors for driving the zoom lens and photoconductor (col.2, lines 58-60 and col.3, lines 13-16). These motors are inherently reversible (bi-directional) for the mere reason that the connected elements move in two directions. It is the examiner's position that a conventional coupling mechanism would be require and is thus inherently implied since a rotary motor could not translate the elements without some kind of rotation-to-translation mechanism. It is also the examiner's position that the coupling mechanism would have to be connected to the elements by a rod or rod-like element.

However, in view of this position, Sato is obviously silent as to the use of control rods to connect the motors (including

associated coupling mechanisms) to the zoom lens and photoconductor. Because of size requirements, rods or wires are commonly used in the endoscope art to actuate movable parts. Kawahara explicitly teaches the use of control rods (shown in Figures 10-15) to move a focusing objective lens system and a zoom lens system. Since the placement of a motor within the distal end would be undesirable because of the increase in diameter, the placement of the motors away from the distal end followed by connection with control rods would be desirable and hence obvious in view of the teaching of Kawahara.

As to the remaining claims cited, note col.2, lines 60-63. Inherently, electromagnetic driving means are controlled by switch means.

7. Claims 67 and 71-73 are rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Kawahara.

Sato, as modified and described above, is also silent as to exactly where the motors are disposed, particularly if they are disposed at the proximal end (handle). Because it is desirable to keep the diameter of the distal end small, an artisan of mere ordinary skill would obvious dispose the bulk drive means (motors of Sato) in the handle portion and connect the drive means with the movable elements by control rods as taught by Kawahara.

8. Claims 59, 60, 62, 68, 70 and 74-77 are rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Kawahara and further in view of Richards.

Sato, as modified above, is silent as to the structure of the illumination system, and specifically as to the use of two tubes containing concentric fibers and a light source in the handle. However, the structure as claimed would be obvious to the skilled artisan for the reasons set forth in section 5 above with respect to the teachings of Richards.

9. Claims 58-61, 68 and 69 are rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Kawahara and further in view of Wallace (U.S. Pat. 3,294,085).

Wallace discloses a similar structure to Richards having concentrically disposed illuminating fibers but also includes a connector (40) for the connection of a fiber cable from a remote light source (as opposed to the light source disposed in the handle). This is a conventional feature in this art that would be obvious the skilled artisan.

10. Claims 56 and 66 are rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Kawahara and further in view of Lia (U.S. Pat. 5,222,477).

Because of the basic, conceptual nature of the drawings of Sato, much conventional structure is left out. This would in include the tube, the handle, the illumination system, and the supports for holding the elements together, all of which are inherently included in this device. Specifically, a frame is not shown for holding the photodetector (C1). Although the examiner believes this to be an inherent element since photodetectors are conventionally held within the endoscope tube by a frame or other support structure, the Lia reference is cited to show a slidable frame for supporting the photodetector (Fig.6). Furthermore, the skilled artisan would obviously realize that the use of a motor instead of the solenoid of Sato (104,106, Fig.1) requires a frame to hold the photodetector.

11. Applicant's arguments filed April 10, 1995 have been fully considered but they are not deemed to be persuasive.

Applicant's response has adequately overcome the objections to the drawings with respect to Figures 6 and 6B and the objections to the specification under 35 U.S.C. § 112 first paragraph. The amendments to the specification and the submission of the proposed drawing corrections overcomes the objection to Figures 3, 3A, 7C and 7D. The proposed drawing corrections have been considered and approved by the examiner. However, since corrections with red ink have been made, the

submitted set of drawings are not considered formal drawings and hence will not be submitted to the draftsman.

Applicant has cancelled claims 25-31 and 34-49 in favor of new, more definitive claims 50-77. The rejections appearing above addresses the issues of these new claims. Because claims have been cancelled, Applicant does not specifically address in detail the previous rejections under 35 U.S.C. § 102 and 103 or the references used in these rejections. However, Applicant submits that the new claims are patentably distinguished from the previously cited references because of one thing: these references fail to show mechanisms that utilize axially movable rods for moving the zoom lens and the photodetector.

Contrary to Applicant's contention, the examiner respectfully submits that all of these references show mechanisms that utilize axially movable rods. With respect to the Sato reference, and as broadly as claimed, the moving coil (104) of the solenoid (DR2) is an axially movable rod. The examiner also took the position that the substitution of rotary motors for (DR1) and (DR2) would inherently require a rod element associated with the coupling mechanism that would also be inherently required. Although not specifically pointed out by the examiner, Richards discloses a slidable lens frame that is actuated by the pushing and pulling action of a wire (82) (see col.5, line 60 to col.6, line 17). Even Ohsawa shows control rods (44,45) in

Figure 1), not to mention the many references cited in section 13 of the previous Office Action, paper number 13.

Therefore, the examiner takes the position that movement of elements at the distal end of an endoscope using axially movable control rods is well known in this art and not a patentable feature. This position is supported by the Office Action appearing above.

12. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Leubecker whose telephone number is (703) 308-0951.

J. Leubecker
June 27, 1995

Richard J. Apley
Supervisory Pat. Exr.
Art Unit 3302